

Applicant: Kenji Oe  
Serial No. 10/707,220  
Filed: 11/27/2003

This listing of claims will replace all prior versions, and listing, of claims in the application:

**Listing of Claims:**

Claims 1-9 (Cancelled)

10. (New) A DC motor drive circuit for driving a single-phase brushless motor including a stator with a single-phase winding and a rotor having a rotor magnet arranged to be opposed to the stator, the DC motor drive circuit comprising:

a position detecting portion for producing two output signals having different phases that correspond to a rotational position of the rotor;

a current controlling portion for controlling current supply to the winding in accordance with the output signal of the position detecting portion; and

a phase advancing portion for receiving two output signals from the position detecting portion and for producing two phase-advanced output signals in which the phases of the output signals are advanced, the phase advancing portion including a differential amplifier having two transistors, and a circuit network made of a capacitor and a resistor that is connected between emitters of the two transistors;

wherein the two output signals from the position detecting portion are respectively supplied to bases of the two transistors, and the phase-advanced output signals are obtained from collectors of the two transistors and are supplied to the current controlling portion so that the timing for supplying current to the winding is advanced.

11. (New) The DC motor drive circuit according to claim 10, wherein the current controlling portion includes a drive circuit having a pair of differential input terminals for

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controlling current supply to the winding in accordance with the output signal of the position detecting portion.

12. (New) A DC motor drive circuit for driving a single-phase brushless motor including a stator with a single-phase winding and a rotor having a rotor magnet arranged to be opposed to the stator, the DC motor drive circuit comprising:

a position detecting portion for producing two output signals having different phases that correspond to a rotational position of the rotor;

a current controlling portion for controlling current supply to the winding in accordance with the output signal of the position detecting portion; and

a phase advancing portion for receiving two output signals from the position detecting portion and for producing two phase-advanced output signals in which the phases of the output signals are advanced, the phase advancing portion including a differential amplifier made of an operational amplifier, a capacitor and a resistor, one of the outputs of the position detecting portion is supplied to the noninverting input terminal of the differential amplifier, and a signal generated by dividing a voltage between the other output of the position detecting portion and the output of the differential amplifier by the capacitor and the resistor is supplied to the inverting input terminal of the differential amplifier;

wherein the two phase-advanced output signals of the phase advancing portion are supplied to the current controlling portion so that the timing for supplying current to the winding is advanced.

13. (New) The DC motor drive circuit according to claim 12, wherein the current controlling portion includes a drive circuit having a pair of differential input terminals for

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Serial No. 10/707,220  
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controlling current supply to the winding in accordance with the output signal of the position detecting portion.

14. (New) A DC motor drive circuit for driving a two-phase brushless motor including a stator with a two-phase winding and a rotor having a rotor magnet arranged to be opposed to the stator, the DC motor drive circuit comprising:

a position detecting portion for producing two output signals having different phases that correspond to a rotational position of the rotor;

a current controlling portion for controlling current supply to the winding in accordance with the output signal of the position detecting portion; and

a phase advancing portion for receiving two output signals from the position detecting portion and for producing two phase-advanced output signals in which the phases of the output signals are advanced, the phase advancing portion including a differential amplifier having two transistors, and a circuit network made of a capacitor and a resistor that is connected between emitters of the two transistors;

wherein the two output signals from the position detecting portion are respectively supplied to bases of the two transistors, and the phase-advanced output signals are obtained from collectors of the two transistor and are supplied to the current controlling portion so that the timing for supplying current to the winding is advanced.

15. (New) The DC motor drive circuit according to claim 14, wherein the current controlling portion includes a drive circuit having a pair of differential input terminals for controlling current supply to the winding in accordance with the output signal of the position detecting portion.

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16. (New) A DC motor drive circuit for driving a two-phase brushless motor including a stator with a two-phase winding and a rotor having a rotor magnet arranged to be opposed to the stator, the DC motor drive circuit comprising:

a position detecting portion for producing two output signals having different phases that correspond to a rotational position of the rotor;

a current controlling portion for controlling current supply to the winding in accordance with the output signal of the position detecting portion; and

a phase advancing portion for receiving two output signals from the position detecting portion and for producing two phase-advanced output signals in which the phases of the output signals are advanced, the phase advancing portion including a differential amplifier made of an operational amplifier, a capacitor and a resistor, one of the outputs of the position detecting portion is supplied to the noninverting input terminal of the differential amplifier, and a signal generated by dividing a voltage between the other output of the position detecting portion and the output of the differential amplifier by the capacitor and the resistor is supplied to the inverting input terminal of the differential amplifier;

wherein the two phase-advanced output signals of the phase advancing portion are supplied to the current controlling portion so that the timing for supplying current to the winding is advanced.

17. (New) The DC motor drive circuit according to claim 16, wherein the current controlling portion includes a drive circuit having a pair of differential input terminals for controlling current supply to the winding in accordance with the output signal of the position detecting portion.